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ABSTRACT

This paper outlines a collaborative research project between six teacher training universities in Australia and South Africa which investigated preservice teachers' acceptance of and social interactions with people with a disability. Preservice teachers (n=2,850) were asked to complete a 20-item Interactions with Disabled Person Scale and twelve accompanying items about a range of demographic characteristics. Results found preservice teachers who had already completed a previous postgraduate degree in another field of study exhibited slightly higher levels of discomfort than did those who had not undertaken any other study since leaving school. Conversely, those who had taken an elective unit on special education as part of the preservice course indicated less discomfort than those who had not done so. Only 124 of the preservice teachers had undertaken any compulsory units on children with special needs; however, the levels of discomfort for those who had completed a compulsory unit were actually greater than the levels indicated by preservice teachers who had not undertaken any compulsory units. The need to undertake extreme caution in the development of compulsory units to ensure that the outcome is not an increase in discomfort on interactions with people with disabilities is discussed. (Contains 24 references.) (CR)

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Dr. Chris Forlin

Re-designing pre-service teacher education courses: An inclusive curriculum in *New Times.*

ED 425 583

Abstract

The concept of inclusive education is considerably more than simply the placement of children with a disability into regular classrooms. According to Mittler (1994:2) inclusion "requires radical school reform, changing the existing system and rethinking the entire curriculum of the school in order to meet the needs of all children". It is essential that teacher training institutions provide relevant courses that reflect such a philosophy. This paper outlines a collaborative research project between six teacher training universities (the Universities of Southern Queensland, Queensland, Queensland University of Technology in Australia, and the Universities of Stellenbosch, Western Cape and Cape Town in South Africa) which investigated pre-service teachers' acceptance of and social interactions with people with a disability. An overview of the project will be given in relation to teacher training in Queensland and South Africa. The use of the Interactions With Disabled Persons Scale (Gething, 1991), and an explanation of the data analysis will be provided in this paper. The main objective of this research is the development and implementation of appropriate preservice training programs for teachers. These research findings will direct the development of future courses at each institution regarding inclusive education.

The first major attempt in Australia to promote greater acceptance and integration of people with disabilities on a large scale occurred during the International Year of Disabled Persons (IYDP) in 1981. During the IYDP, there was a concerted effort to change the status of people with disabilities by educating public attitudes towards them. The campaign via media and a range of other means set out to provide accurate and non- mythical information about disabilities. Clearly, this was the first step towards full public awareness, acceptance, and integration of people with disabilities in Australia (Gething, 1986). Since the IYDP there has been a rapid momentum towards including people with disabilities into the mainstream of society. There have been a large number of closures of institutions which previously catered for people with disabilities in completely segregated environments. Many of these people have been reintegrated into their local communities, living in family homes with minimal support. Similarly, the focus on educating children with disabilities has changed from placement in segregated special schools to greater inclusion in regular classes.

Until recently the international principal of normalisation has been virtually ignored in South Africa (Donald, 1996). During the apartheid years, which existed until 1992, education in South Africa was the responsibility of a complicated and uncoordinated system of 18 different education departments which were segregated according to race, colour, and disability. It was only in late 1996 that education was deemed to be a

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right for all learners and that each learner was perceived to have the opportunity to participate in a common education curriculum (*Constitution of South Africa*, 1996; *White paper on Education and Training, Department of Education*, 1995). The recent *South African Education For All* discussion document (NCSNET, 1997), promotes the notion of inclusive education and recommends that all learners should have access to a unitary education system that is responsive to diversity. Redressing the previous disadvantage in South African schools by introducing an education for all policy is considerably broader than similar inclusive policies in other western countries as it also includes children who have been previously disadvantaged by race and colour as well as by disability (Engelbrecht & Forlin, 1997).

Due to the strong movement towards educating students with disabilities in regular classrooms, rather than segregated classes, more teachers have become involved in the education of students with disabilities, and this is likely to increase in the future in all countries. Teachers' attitudes towards people with disabilities are therefore critical. Teacher training in both Australia and South Africa has traditionally focused on either general or specialised educational courses. In recent years almost all training institutions in Australia have begun to include units of work on children with special needs into their core curricula for general teachers but these are only just becoming formalised by way of being required for teacher registration in some states. Australia has been following a rather slow although progressive movement towards mainstreaming for the past twenty years (Forlin, 1997). In South Africa, though, the suddenness with which they intend to move to one education system for all implies an immediate need for pre-service courses to undergo radical changes if they are to prepare teachers to cope with such a dramatic educational transformation with little lead-in time. In addition, pre-service teacher education in South Africa has to date been fragmented and inequitable with the majority of teachers having been disadvantaged by the poor quality of their training (*National Education Policy Investigation*, 1993).

The attitudes of teachers towards people with a disability are of the utmost importance if equitable access is to be ensured for all children. The effect of different attitudes on behaviour can be quite profound. Negative attitudes have been found to lead to low expectations of a person with a disability, whereas, positive attitudes can lead to higher expectations, increased learning opportunities, and increased performance of learners (Gold, 1980, cited in Beckwith & Mathers, 1995). There is little doubt that teachers are going to be required to cater for the needs of children with many diverse abilities and in particular children with disabilities in their regular classrooms. Consequently, there is an urgent need to ensure that pre-service education courses at universities consider the existing attitudes of trainee teachers and identify ways to make them as positive as possible towards people with disabilities.

Method

This study investigated the attitudes of pre-service education university students across six different universities towards people with disabilities. Three universities

were in Queensland, Australia, namely, the University of Southern Queensland, the University of Queensland, and Queensland University of Technology. The other three universities were in the Western Cape area of South Africa, namely, the University of Stellenbosch, the University of the Western Cape and Cape Town University. The pre-service teachers from the Queensland universities came from similar backgrounds with access to courses being funded by the commonwealth Department of Education, Employment, Training, and Youth Affairs (DEETYA). The pre-service teachers at Stellenbosch and Cape Town came from perceived traditionally advantaged universities and from middle class backgrounds. Western Cape was considered to be a traditionally disadvantaged university with many students coming from poor families.

Academics at each of these universities are endeavouring to ensure that their courses meet the needs of teachers who will be required to teach a broad range of children, including those with disabilities, in regular classes. The outcome of this study is to identify attitudes towards people with disabilities by university students who are currently training to become teachers, and subsequently, to develop appropriate pre-service teacher education courses.

Data were collected from pre-service teachers enrolled at each of the six universities. Questionnaires were administered early in Semester One, 1997. Pre-service teachers were asked to complete a 20-item *Interactions with Disabled Persons Scale* (IDP, Gething, 1994) and twelve accompanying items about a range of demographic characteristics. The IDP scale was selected as according to Gething (1992) it was developed to "measure emotions, motivations and reactions which underlie negative attitudes associated with discomfort that some people experience in actual or anticipated social interaction with a person with a disability" (p. 26). Participation was voluntary and time was allocated during lectures to complete the questionnaire. A total of 2850 pre-service teachers responded. The demographic characteristics of the pre-service teachers are reported first.

1. Demographic Characteristics

All pre-service teachers were education students completing either an undergraduate or postgraduate degree or diploma and 83% of the total cohort were studying in the Queensland universities. Table 1 compares the demographic composition of the sample.

Age, Gender, Language, and Course

Due to small cell sizes in certain categories some data were combined, as done previously by Gething (1993). Age was reduced to four levels: less than 19 years, 19 - 29 years, 30 - 39 years, and greater than 40 years. The majority of the pre-service teachers were in the age range from 19 - 29 years (68%), with a further 20% being less than 19 years old. Only 11% of the total sample were older than 30 years.

Table 1

Distribution of Education Pre-service teachers for Biographic Subgroups

Independent Variable	Western Cape			Queensland		
	1	2	3	4	5	6
Age						
< 19 years	9	2	2	185	97	306
19-29 years	171	184	50	260	126	1148
30-39 years	2	41	4	32	18	125
40 + years	1	6	3	16	10	46
Gender						
Male	19	70	12	100	58	330
Female	164	163	47	392	193	1292
English as first language						
Yes						
No	51	14	35	476	233	1564
Current course	132	219	24	17	17	56
B.Ed (sec)						
Post Grad Dip Ed	0	0	1	86	18	762
B.Ed Prim/EC	59	49	40	58	27	309
Higher Ed Dip	81	0	10	334	0	528
Further Dip in Ed	2	165	5	0	1	1
Parallel Degree	37	8	0	0	1	1
Other	0	0	0	1	141	1
	4	11	3	12	62	0
Sample sizes						
	183	233	59	493	251	1625

Note: 1 = Stellenbosch; 2 = Western Cape; 3 = Cape Town; 4 = USQ; 5 = UQ; 6 = QUT

Nearly 80% of the sample were females. Ninety six percent of Australian pre-service teachers had English as their first language compared to only 21% of the South African sample, although this varied between universities in South Africa. Whereas, pre-service teachers from the University of Stellenbosch were mainly Afrikaans speaking, and those from Western Cape had Xhosa as their first language, 59% of pre-service teachers from Cape Town had English as their first language.

The pre-service teachers at the six universities were undertaking different courses. The majority of those at Stellenbosch, Cape Town, and the three Queensland universities were completing a BEd or post graduate Diploma in Education, while 71% of pre-service teachers at Western Cape were undertaking a higher education diploma.

Level of Education

Level of education of the pre-service teachers was determined by four categories: highest level of education completed; year of study in their current university course; number of compulsory units completed in special education; and number of elective units completed in special education. Categories of compulsory and elective units were combined to produce two categories: completed no units, and completed one or more units. Table 2 illustrates these levels of education.

The majority of pre-service teachers (69%) had completed their study at high school. This was particularly noticeable for pre-service teachers at Western Cape where this

accounted for 78% of their sample. Comparatively, 71% of pre-service teachers from Cape Town, though, already held an undergraduate or postgraduate degree. Twenty two percent of the total cohort held an undergraduate degree, and 6% held a diploma. Only 2% had a postgraduate degree and they were mainly from QUT, Cape Town or USQ.

Table 2
Distribution of Education Pre-service Teachers for Level of Education.

Independent Variable	South African Universities			Queensland Universities		
	1	2	3	4	5	6
Highest level completed						
Year 12 or equivalent	85	174	15	364	196	1106
Diploma	24	7	2	23	13	105
Undergraduate degree	73	51	28	88	38	351
Postgraduate degree	1	1	14	9	3	42
Year of course						
1st year	97	69	42	253	138	605
2nd year	37	69	0	130	47	361
3rd year	12	1	11	69	52	354
4th year	37	94	6	37	11	291
Compulsory units						
No units	140	233	59	461	230	1581
1 or more units	43	0	0	32	21	40
Elective units						
No units	183	233	59	474	143	1385
1 or more units	0	0	0	19	108	235
Sample sizes	183	233	59	493	251	1621

Note: 1 = Stellenbosch; 2 = Western Cape; 3 = Cape Town; 4 = USQ; 5 = UQ; 6 = QUT

Pre-service teachers were in different years of their study with 43% in their first year, 23% in second year, and 17% in both third and fourth years. The considerably larger number of pre-service teachers in first year identifies the overall increasing number of students enrolled in education courses at these universities over the past four years, although some reduction in numbers is due to natural attrition.

A very small minority of pre-service teachers had undertaken any units of study directly related to special education. Of the total sample 95% had completed no compulsory units and only 13% had undertaken any elective units in special education. In particular, none of the pre-service teachers at Western Cape and Cape Town had received any training in teaching children with special education needs. For the three Queensland universities training in special needs apparently occurs during the pre-service teachers final year of study. A repeat data collection is, therefore, planned for late in Semester 2 for the final year pre-service teachers.

Contact with People with Disabilities

Frequency of contact for pre-service teachers with people with disabilities ranged from 11% of respondents who recorded weekly contact to 30% who reported contact

less than once every three months. Degree of contact varied considerably between universities. For those at Cape Town direct contact at least once a month was limited to 46% of pre-service teachers, for those at Stellenbosch this was 61%, and for the Australian sample this was 57%. Pre-service teachers at Western Cape, however, experienced significantly more contact with people with disabilities as 82% reported contact at least once a month and of these, one third had daily contact and a further one third had weekly contact. The distribution of education pre-service teachers for degree of contact with people with disabilities is presented in Table 3.

Table 3
Distribution of Education Pre-service teachers for Contact with People with Disabilities.

Independent Variable	South African Universities			Queensland Universities		
	1	2	3	4	5	6
Direct contact						
daily	13	77	6	46	25	123
weekly	48	75	16	134	95	479
once a month	51	41	5	89	37	314
once every 3 months	13	14	6	55	20	183
less than every 3 months	58	19	22	157	70	457
Type of contact						
sibling	4	12	2	13	3	42
child	46	44	16	98	57	360
adult friend	62	89	8	121	91	345
parent	2	7	1	6	44	30
multiple contacts	11	13	5	29	23	524
other	58	55	17	163	1	54
Sample sizes	183	233	59	493	251	1621

Note: 1 = Stellenbosch; 2 = Western Cape; 3 = Cape Town; 4 = USQ; 5 = UQ; 6 = QUT

The nature of contact with people with disabilities was assessed for contact with siblings (3%), a child (25%), an adult friend (30%), a parent (4%), and others (33%). In addition, 5% of respondents indicated multiple contacts with people from two or more categories.

The majority of contact for pre-service teachers from Stellenbosch and Western Cape was with either an adult friend or a child, with some respondents reporting multiple contacts and approximately one quarter having other types of contact. Pre-service teachers at Cape town were more likely to have contact with a child than with an adult friend. Similar responses were recorded for those from USQ and UQ although a larger proportion of pre-service teachers from QUT reported multiple contacts with a range of different people with disabilities.

Occupation

Occupation was determined by assessing the number of years each pre-service teacher had held a full-time job. In addition, the occupation of their partner, father and mother, was also requested. Information regarding the occupation of partner is not reported here due to missing data accounting for 70% of the sample. This would indicate that the majority of the pre-service teachers were single. It was interesting to note that 23% of the sample gave no response for occupation of mother and 24% of

the sample indicated no response for occupation of father. Although there could have been many reasons for this including one parent families, the South African pre-service teachers indicated that while they invariably knew where their parents worked they were uncertain as to the type of job that they actually held.

Table 4
Distribution of Education Pre-service teachers for Occupation

Independent Variable	South African Universities			Queensland Universities		
	1	2	3	4	5	6
Held a full-time job						
never	147	175	42	290	157	942
< 1 year	19	18	8	47	39	204
1 - 5 years	13	23	5	97	30	276
5 years +	4	17	4	50	24	178
Occupation of mother						
Domestic duties	61	44	9	72	28	124
Professional	44	26	15	92	61	395
Management	10	2	2	32	16	71
Trade	48	9	10	113	70	452
Unskilled work	3	33	1	66	20	86
Pension/unemployed	4	19	7	6	6	28
Student	0	0	1	12	2	6
Other	0	2	1	31	3	55
Missing data	13	98	13	69	45	404
Occupation of father						
Domestic duties	0	1	0	0	1	48
Professional	55	16	15	90	72	410
Management	50	2	7	60	37	118
Trade	48	11	10	147	63	446
Unskilled work	2	23	1	69	24	73
Pension/unemployed	6	22	1	11	9	23
Student	0	0	0	3	1	3
Other	3	11	3	41	3	75
Missing data	19	147	22	72	41	425
Sample sizes	183	233	59	493	251	1621

Note: 1 = Stellenbosch; 2 = Western Cape; 3 = Cape Town; 4 = USQ; 5 = UQ; 6 = QUT

The main occupation of father varied significantly across the three universities (see Table 4). At the two traditionally advantaged South African universities the majority of fathers were employed in professional, management, or trade (Stellenbosch = 84%; Cape town = 54%), whereas, at Western Cape less than 12% of fathers were so employed. At the Queensland universities at least 60% of all fathers were also employed in similar positions. When interpreting this data it is important to note that 40% of pre-service teachers in Western Cape, and 23% in Queensland, did not provide information regarding the employment of their father. Consequently, the data reported here regarding occupation of father need to be interpreted with caution.

Similarly, for occupation of mother 26% of pre-service teachers in Western Cape and 22% in Queensland gave no response to this question. Of those that did respond approximately 60% of mothers from Stellenbosch and Cape Town were employed in professional, management or trade, together with almost one half of those from Queensland. Conversely, 71% of mothers from Western Cape were employed in domestic duties, unskilled work, or were on a pension or unemployed, whereas, less

than 18% of mothers of the Queensland pre-service teachers were employed in similar duties.

2. The *Interactions with Disabled Persons Scale* (IDP)

Scale Development

Gething (1986) developed the *Attitudes Towards Disabled Persons Scale* (ATDP-O) to measure the attitudes of non-disabled members of the workforce in Australia in early 1981 (N=820) and 18 months later (N=727), i.e. prior to and following the IYDP. The results suggested that following the IYDP there was an increase in positive attitudes towards the treatment of people with disabilities and towards them receiving equitable services. The general public, however, showed no increase in acceptance nor did they recognise the non-disability related characteristics within people with disabilities. Overall, less than 25% of respondents reported frequent contact with people with disabilities and 68.8% of respondents showed no change in contact following the media campaign (Gething, 1991). Two Australia wide surveys in the early 1990s also reported that less than 25% of the community have frequent close contact with people with disabilities (Gething, 1994). Subsequently, the ATDP-O underwent evaluation and refinement and a revised version of the scale, which was renamed the *Interaction with Disabled Persons Scale* (IDP) was produced in 1991 (Gething, 1991). The IDP scale consisted of 20-items derived from open-ended written responses from 633 people in 1980 who described how they felt when meeting someone with a disability (Gething & Wheeler, 1992).

When comparing university education students to other professionals, education students have been found to exhibit higher levels of discomfort in meeting people with disabilities, when measured on the IDP scale (Gething, 1992; Gething, 1994). This has been found to vary, though, depending upon the type of course undertaken at university. In particular, Gannon and MacLean (1995) have reported that when using the *Attitudes Towards Disabled Persons Scale* (ATDP), Australian education undergraduate students have exhibited more positive attitudes towards people with disabilities than have business students.

Analyses of Australian data using the IDP scale has consistently found that greater contact with people with disabilities is associated with reports of lower levels of discomfort (Gething, 1991). The use of the IDP scale with tertiary students also confirms that frequency of contact has a positive effect on perceived levels of discomfort (Beckwith & Matthews, 1994; Gething, 1992; MacLean & Gannon, 1995). International administrations of the IDP have supported these finding (Gething, 1994).

Data Analysis using the IDP

The IDP scale is a 20 item six point Likert scale designed to measure attitudes towards people with disabilities by assessing levels of discomfort in social

interactions as a central factor underlying negative attitudes (Gething, 1992). Responses for each item range from *I agree very much* (6) to *I disagree very much* (1). Higher scores indicate greater discomfort in social interactions with people with disabilities. A Total Scale Score (TSS) was derived from the IDP according to criteria suggested by Gething (1991). Analysis of variance was conducted on the data using the TSS and this is reported elsewhere (Forlin & Engelbrecht, 1997). Subsequently, a detailed psychometric analysis of the IDP scale was undertaken. This resulted in the reduction of the IDP to produce a 14-item version with an internal consistency reliability estimate of .80 (see Forlin, Fogarty, & Carroll, 1997, for a detailed review).. This shortened version was deemed to be the most appropriate scale to employ to determine pre-service teachers' levels of discomfort on interactions with people with a disability. This revised 14-item version was renamed the *General Discomfort Scale* and is employed in the following analysis in this study.

A total score was calculated by summing the 14 items. The mean of total score was 50.28 with a SD of 10.57. The mode was 47 and the median 50. The obtained distributions of the 14-item scale appeared well spread and centered. The possible range for each respondent's score was 14 (low discomfort) to 84 (high discomfort). A reliability coefficient of .80 was obtained. This was within the range of alpha coefficients of .75 to .86 reported by Gething and Wheeler (1992) across 12 samples using the full IDP scale.

Initially, analysis of Variance (ANOVA) was employed to test the effects of the independent variables. Because of the large data set (N=2850) small differences in the means were recording statistically significant effects. As statistical testing seemed inappropriate the increasingly encouraged practice of reporting effect size was employed (Hammond, 1996; Schmidt, 1996). The effect size was calculated by determining the difference between the means and then dividing the result by the standard deviation of the scale (Howell, 1992). This provided a measure of the degree to which the means differed in terms of the standard deviation of the total population. The standard deviation for the *General Discomfort Scale* was 10. 57 and this was used in calculating the effect size for each variable. The effect size is subsequently reported from 0.00 to 1.00. According to Cohen (1998, cited in Howell, 1992), an effect size of .20 is to be considered small, .50 is medium, and .80 is large.

Results

When considering the effect of the demographic variables of age, gender, and ESL there were differences between the means but these produced negligible effect sizes. The means and effect sizes are reported in Table 5. Younger pre-service teachers reported higher levels of discomfort than did the more mature age students. Likewise, female pre-service teachers indicated higher levels of discomfort than did males. Pre-service teachers who spoke English as their second language also gave slightly higher levels of discomfort but all these effects were negligible.

Table 5

Effect Size for Total Data Set for *General Discomfort Scale* for Age, Gender & English

Independent Variable		N	Mean	Effect Size
Age				
	19-29 years	2517	50.68	
	30+ years	299	49.74	-.02
Gender				
	Female	2225	50.54	
	Male	575	49.31	+.12
English as 1st. lang.				
	Yes	2340	50.14	
	No	460	51.02	+.08

Note: SD = 10.57

When consideration was given to level of education there was a small effect for previous educational attainment, with the pre-service students who had completed the most study indicating the highest levels of discomfort. It should be noted though the small number of pre-service students in this category (N = 66). Although degree of discomfort decreased slightly over the duration of course this was again only a negligible effect. Table 6 reports the findings for level of education.

An unexpected finding was found for pre-service teachers who had completed either compulsory or elective units in special education. While only 124 pre-service teachers had undertaken a compulsory unit in special education these teachers reported slightly higher levels of discomfort than did those who had not undertaken any compulsory training. Conversely, when pre-service teachers had elected to undertake a unit in special education (N=293) there was a noticeable but small effect in the reduction of their perceived levels of discomfort. Conceivably it could be construed that those who volunteer to undertake additional training in special education may be more favourably inclined towards people with disabilities and therefore perceive less discomfort in their interactions with them. What is of concern is that levels of discomfort for pre-service teachers who undertook compulsory units actually increased. As the outcome of this study is to develop appropriate compulsory pre-service training courses that will ameliorate negative attitudes towards people with disabilities this aspect needs further investigation.

Table 6
Effect Size for Total Data Set for *General Discomfort Scale* for Level of Education

Independent Variable	N	Mean	Effect Size
Education			
Year 12	1179	50.25	
P/Grad deg.	66	52.47	+.21*
Year of study			
1st year	1179	50.89	
4th year	456	49.81	-.10
Comp. units			
No units	2287	49.91	
1+ units	124	51.28	+.12
Elec. units			
no units	2118	50.24	
1+ units	293	48.11	-.20*

Note: SD = 10.57
* = small effect size

In previous studies contact with people with disabilities has influenced reported levels of discomfort in interactions with them (Gething, 1991; Beckwith & Matthews, 1994; MacLean & Gannon, 1995). This finding was supported by the data in this study (see Table 7). There was a negative trend across degree of contact from relatively low levels of discomfort reported by students with daily contact with people with disabilities, to considerably higher levels of discomfort reported by students with contact less than once every three months. There was a large effect size (.70) between daily contact and contact less than once in every three months. For pre-service teachers contact with people with disabilities has an important impact on their degree of comfort during interactions with them. Type of contact also led to different levels of discomfort, with contact with a sibling being associated with the lowest levels of discomfort.

Table 7
Effect Size for Total Data Set for *General Discomfort Scale* for Contact with People with Disabilities

Independent Variable	N	Mean	Effect Size
Contact			
Daily	285	46.20	
< every 3 months	544	53.60	+.70***
Person			
Sibling	75	48.12	
Other	2336	49.67	+.14

Note: SD = 10.57
*** = large effect size

There was also some difference between those who had been in the work force and those who had not. Pre-service students who had never held a full-time job reported slightly higher degrees of discomfort with people with disabilities than did those who had been employed for at least one year in a full-time capacity although this was a very minimal effect. In addition, if the mother was occupied with home duties the pre-service teachers' levels of discomfort showed a noticably small increase compared to all other occupations.

Table 8
Effect Size for Total Data Set for *General Discomfort Scale* for Occupation

Independent Variable	N	Mean	Effect Size
Job			
Never	1719	51.04	
1+ years	1015	49.05	-.18
Mother Occupation			
Home Duties	313	52.50	
Other	1583	49.58	-.27*
Father Occupation			
Home Duties	49	51.51	
Other	1932	50.53	-.09

Note: SD = 10.57
* = small effect size

Comparing level of discomfort for university it was apparent that the pre-service students from the Western Cape universities generally expressed more discomfort (M=52.24) than did the pre-service students from the Queensland universities (M = 49.89). (*Note*: A detailed analysis of the findings for both countries is included in the subsequent two papers in the symposium)

Discussion

Of the 2850 students completing pre-service teacher training courses at these six universities the majority were female and very few were mature age students older than 30 years. The highest level of education achieved for most of these students was Year 12 or equivalent, although approximately one fifth of the cohort held an undergraduate or post-graduate degree. By the time the pre-service teachers had reached the start of their final year of training only 5% had undertaken any compulsory courses in teaching children with special needs, and only 13% had taken any elective units in special education. Direct contact for pre-service teachers with people with disabilities varied between universities but overall 40% reported frequent contact of at least weekly, 19% indicated contact monthly and the remainder did not have contact more frequently than once every three months. This is noticeably higher than the 25% reported in previous studies which have assessed amount of contact for the general public (Gething, 1991, 1994). Sixty-two percent of pre-service teachers had never held a full-time job prior to commencing their studies. The majority came

from a family background where their parents were employed in professional, management, or trade work. The exceptions to this were the students from the traditionally disadvantaged Western Cape University. Although there were a large proportion of missing data from Western Cape of those that did respond to this question less than 10% of fathers were employed in professional, management, or trade situations, and more than 70% of mothers were employed in domestic duties, unskilled work, or were unemployed.

By employing the revised 14-item *General Discomfort Scale* it was possible to identify the effect that a range of demographic variables had on pre-service teachers levels of discomfort during interactions with people with disabilities. Small effect sizes were found for level of education, type of previous study in special education, and for occupation of mother. Pre-service teachers who had already completed a previous postgraduate degree in another field of study exhibited slightly higher levels of discomfort than did those who had not undertaken any other study since leaving school. Conversely, those who had taken an elective unit on special education as part of their pre-service course indicated less discomfort than those who had not done so. At this stage only 124 of the pre-service teachers in this cohort had undertaken any compulsory units on children with special needs. While this is too small a number to consider any differences in means to be reliable it should be noted that for those who had completed a compulsory unit their levels of discomfort as measured by the *General Discomfort Scale* were actually greater than the levels indicated by pre-service teachers who had not undertaken any compulsory units. The development of compulsory units for pre-service teachers must, therefore, be undertaken with extreme caution to ensure that the outcome is not an increase in perceived levels of discomfort on interactions with people with disabilities.

Similar to all previous findings reported by using the IDP scale (Gething, 1991, 1994; Beckwith & Matthews, 1994; MacLean & Gannon, 1995), the results of this study produced a strong effect size for contact with people with disabilities. Pre-service teachers who had more frequent contact with people with disabilities attributed significantly less discomfort during interactions with them than did those who experienced little contact.

These findings have major implications for structuring appropriate pre-service courses for training teachers to cater for students with disabilities in inclusive classrooms. There seems little doubt that increased contact with people with disabilities helps pre-service teachers to overcome feelings of discomfort when interacting with them. According to Gething (1992) feelings of discomfort can be closely linked to negative attitudes, which in turn have been seen to be associated with low expectations of people with disabilities (Gold, 1980, cited in Beckwith & Mathers, 1995). In an attempt to raise teachers' expectations for students with disabilities, and ameliorate negative attitudes towards them, it is proposed that compulsory pre-service courses should be developed to include direct contact on a regular basis with people with disabilities. This could be in the format of guest lectures or tutorial interactions at universities, or more involvement with people with disabilities in the community.

Care needs to be taken to ensure that compulsory units do not exacerbate levels of discomfort for pre-service teachers and that contact is frequent and undertaken with a range of different people. In addition, training for inclusive classrooms needs to be better integrated into pre-service programs from the first year of study and not left to the final year of study, as appears to currently be the case. Inclusive educational practices have been recommended in Australia since the early 1980s yet it is apparent that pre-service courses in Queensland, at least, are still not currently addressing this adequately in their courses. As South Africa implements its *Education For All* policy it is hoped that changes to their pre-service courses will not take as long to implement.

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